

**NPN Transistor**

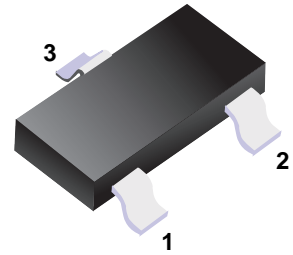
**Features**

◆ Low equivalent on-resistance



**Marking**

Marking Code	
FMMT491	491



■ Simplified outline(SOT-23)

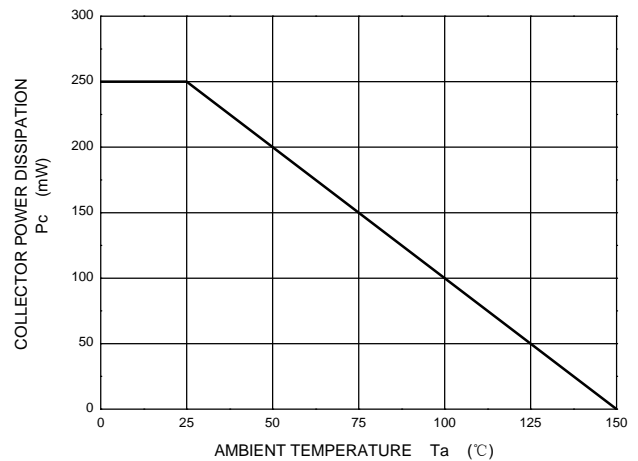
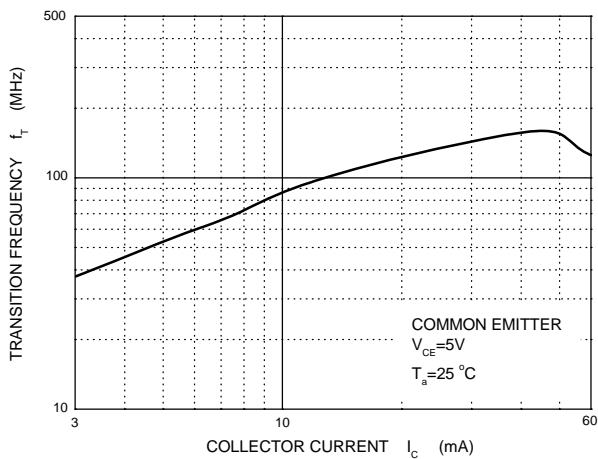
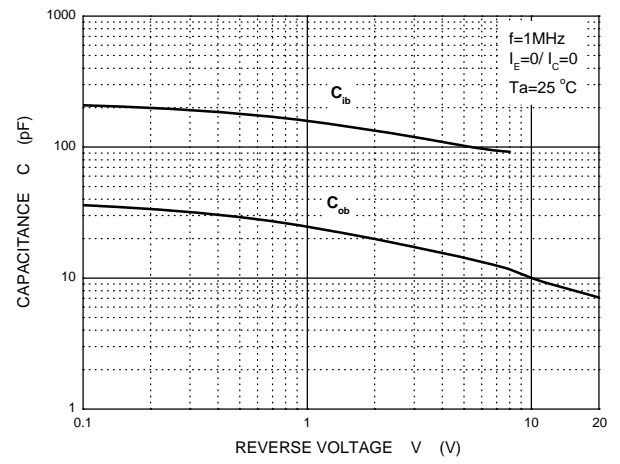
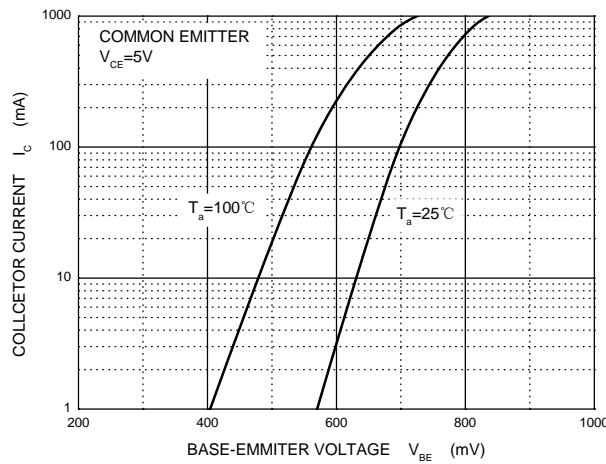
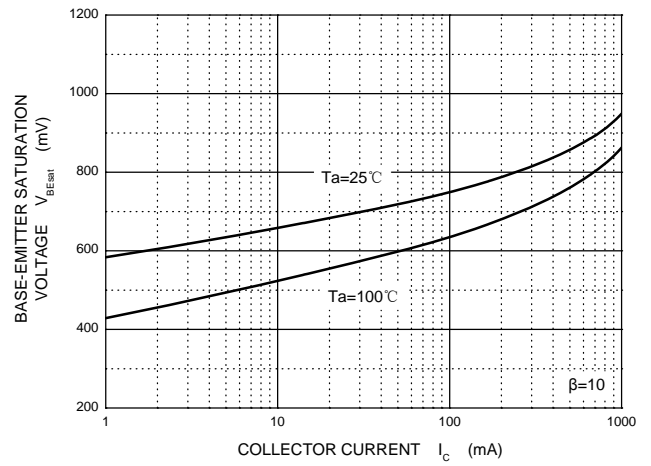
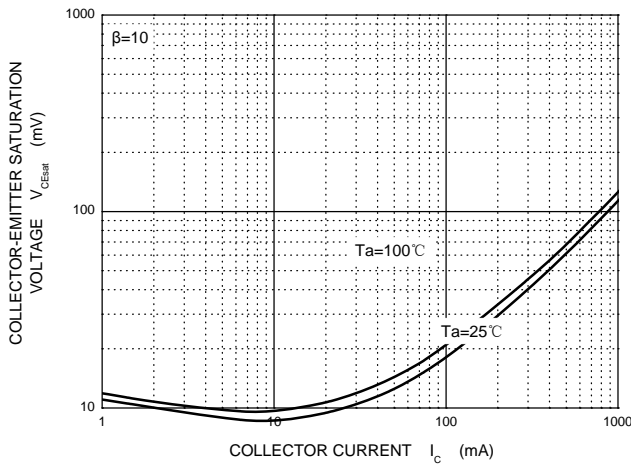
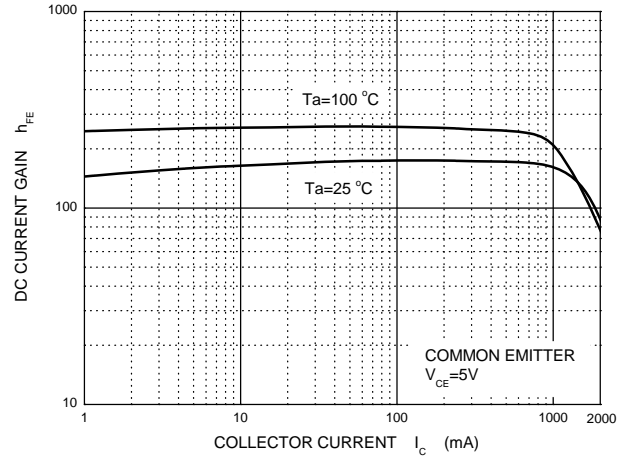
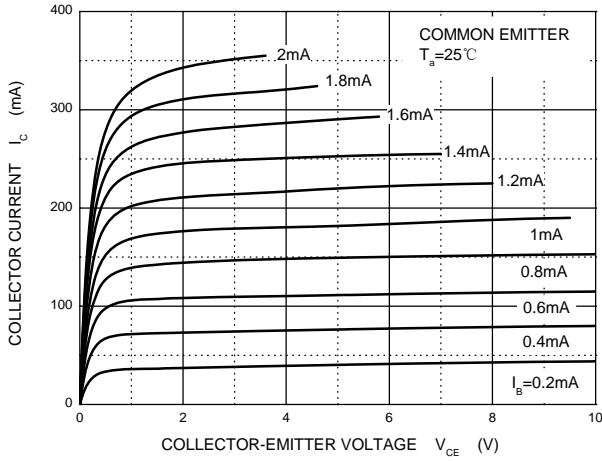
**MAXIMUM RATINGS (T<sub>a</sub>=25°C unless otherwise noted)**

Symbol	Parameter	Value	Unit
V <sub>CB0</sub>	Collector-Base Voltage	80	V
V <sub>CEO</sub>	Collector-Emitter Voltage	60	V
V <sub>EBO</sub>	Emitter-Base Voltage	5	V
I <sub>C</sub>	Collector Current	1	A
I <sub>CM</sub>	Peak Pulse Current	2	A
P <sub>C</sub>	Collector Power Dissipation	250	mW
R <sub>θJA</sub>	Thermal Resistance From Junction To Ambient	500	°C/W
T <sub>J</sub> , T <sub>stg</sub>	Operation Junction and Storage Temperature Range	-55~+150	°C

**ELECTRICAL CHARACTERISTICS (T<sub>a</sub>=25°C unless otherwise specified)**

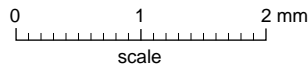
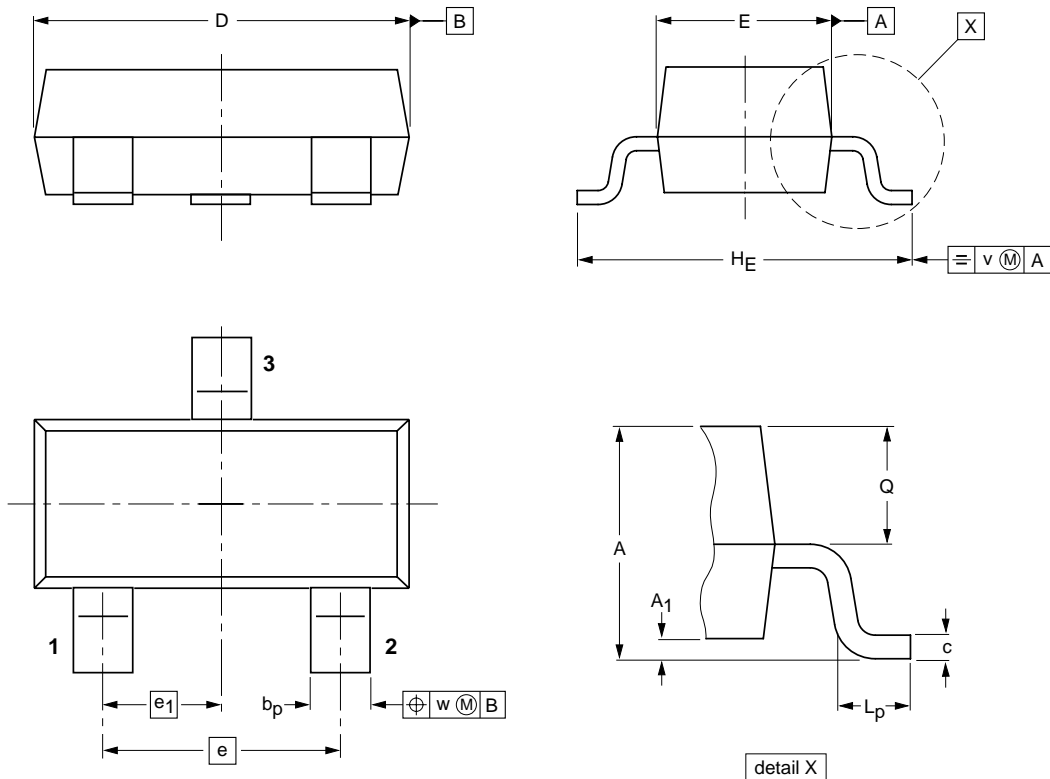
Parameter	Symbol	Test conditions	Min	Typ	Max	Unit
Collector-base breakdown voltage	V <sub>(BR)CBO</sub>	I <sub>C</sub> =100μA, I <sub>E</sub> =0	80			V
Collector-emitter breakdown voltage	V <sub>(BR)CEO</sub> <sup>1</sup>	I <sub>C</sub> =10mA, I <sub>B</sub> =0	60			V
Emitter-base breakdown voltage	V <sub>(BR)EBO</sub>	I <sub>E</sub> =100μA, I <sub>C</sub> =0	5			V
Collector cut-off current	I <sub>CBO</sub>	V <sub>CB</sub> =60V, I <sub>E</sub> =0			0.1	μA
Emitter cut-off current	I <sub>EBO</sub>	V <sub>EB</sub> =4V, I <sub>C</sub> =0			0.1	μA
DC current gain	h <sub>FE(1)</sub>	V <sub>CE</sub> =5V, I <sub>C</sub> =1mA	100			
	h <sub>FE(2)</sub> <sup>1</sup>	V <sub>CE</sub> =5V, I <sub>C</sub> =500mA	100		300	
	h <sub>FE(3)</sub> <sup>1</sup>	V <sub>CE</sub> =5V, I <sub>C</sub> =1A	80			
	h <sub>FE(4)</sub> <sup>1</sup>	V <sub>CE</sub> =5V, I <sub>C</sub> =2A	30			
Collector-emitter saturation voltage	V <sub>CE(sat)1</sub> <sup>1</sup>	I <sub>C</sub> =500mA, I <sub>B</sub> =50mA			0.25	V
	V <sub>CE(sat)2</sub> <sup>1</sup>	I <sub>C</sub> =1A, I <sub>B</sub> =100mA			0.5	V
Base-emitter saturation voltage	V <sub>BE(sat)</sub> <sup>1</sup>	I <sub>C</sub> =1A, I <sub>B</sub> =100mA			1.1	V
Base-emitter voltage	V <sub>BE</sub> <sup>1</sup>	V <sub>CE</sub> =5V, I <sub>C</sub> =1A			1	V
Transition frequency	f <sub>T</sub>	V <sub>CE</sub> =10V, I <sub>C</sub> =50mA, f=100MHz	150			MHz
Collector output capacitance	C <sub>ob</sub>	V <sub>CB</sub> =10V, f=1MHz			10	pF

<sup>1</sup>Measured under pulsed conditions, Pulse width=300μs, Duty cycle≤2%.



**Package Outline**

**SOT-23**



**DIMENSIONS (mm are the original dimensions)**

UNIT	A	A <sub>1</sub> max.	b <sub>p</sub>	c	D	E	e	e <sub>1</sub>	H <sub>E</sub>	L <sub>p</sub>	Q	v	w
mm	1.1 0.9	0.1	0.48 0.38	0.15 0.09	3.0 2.8	1.4 1.2	1.9	0.95	2.5 2.1	0.45 0.15	0.55 0.45	0.2	0.1

**Summary of Packing Options**

Package	Packing Description	Packing Quantity	Industry Standard
SOT-23	Tape/Reel, 7" reel	3000	EIA-481-1

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